

WHAT IS CLAIMED IS:

1. A memory device comprising:

a recording film including at least one element selected from the group consisting of Ge and Sb, and Te of 40 atom percent or more, and at least one element selected from the elements in a 2b group, 1b group, 3a to 7a groups and an 8 group of 20 atom percent to 50 atom percent, said recording film recording information by causing a reversible phase change between a crystal phase and an amorphous phase; and

an electrode for applying a voltage to said recording film.

2. The memory device according to claim 1, wherein the element selected from said groups is Zn or Cd in the 2b group.

3. The memory device according to claim 1, wherein a content of said at least one element selected from the group consisting of Ge and Sb is less than 40 atom percent.

4. The memory device according to claim 1, wherein a content of said at least one element selected from the group consisting of Ge and Sb is 25 atom percent to 35 atom percent.

5. The memory device according to claim 1, wherein said device is used in an atmosphere at 140°C or more.

6. The memory device according to claim 1,

comprising it has an area adjacent to said recording film in which a content of Zn or Cd is relatively more by 10 atom percent or more.

7. The memory device according to claim 1, wherein said memory element transmits a recording or reproducing light by 30 percent or more.

8. A memory device comprising:
a plurality of memory cells;
a plurality of word lines for selecting said plurality of memory cells;

a plurality of data lines placed to be orthogonal to said plurality of word lines and having signals read thereto from said plurality of memory cells, and

each of said plurality of memory cells comprising a recording film including at least one element selected from the group consisting of Ge and Sb, and Te of 40 atom percent or more, and at least one element selected from the elements in a 2b group, 1b group, 3a to 7a groups and an 8 group of 20 atom percent to 50 atom percent, said recording film recording information by causing a reversible phase change between a crystal phase and an amorphous phase, and an electrode for applying a voltage to said recording film.

9. The memory device according to claim 8, wherein an insulating film is provided between said recording film and said electrode.

10. The memory device according to claim 4,
wherein both of the Ge and Sb are included and the
ratio between Ge and Sb is in the range of 1:2 to 2:1.